

**LEPTOCERA (PTEREMIS) RONDANI IN NORTH AMERICA
(DIPTERA, SPHAEROCERIDAE)**

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Abstract.—The three North American species formerly placed in *Leptocera* subgenus *Pteremis* Rondani are discussed, and two of them are relegated to other genera of the Limosiniinae. A new species, *Leptocera (Pteremis) wirthi*, is described from specimens collected in Northwest Territories, Alberta, Saskatchewan, and Quebec. Two new combinations, *Aptilotus parvipennis* (Spuler) and *Pterogramma flavifrons* (Spuler), are given.

Pteremis Rondani, a subgenus of *Leptocera* Olivier, has as its type species *Borborus nivalis* Haliday, which is a synonym of *P. fenestralis* (Fallén). This is a very variable, Palaearctic species, ranging from fully winged to brachypterous. Two other Palaearctic species have been placed in this subgenus. *Leptocera (Pteremis) kaszabi*, was described by Papp (1973) on the basis of one specimen from Mongolia, and *Leptocera (Pteremis) canaria* was described by Papp (1977) on the basis of 4 specimens from the Canary Islands. Three North American species were described in the subgenus *Pteremis* by Spuler (1924). These 3 species have little more in common with each other, with Spuler's diagnosis of *Pteremis*, or with *P. fenestralis*, than a common tendency towards wing reduction. None of Spuler's *Pteremis* have a preapical ventral bristle on the midtibia, which is characteristic of *Pteremis* and other subgenera of *Leptocera*, or the long apical, posteroventral midtibial bristle lying flat against the midbasitarsus that is characteristic of the subgenus *Pteremis*.

The species that Spuler described as *Pteremis parvipennis* belongs in the *pulex* group of the genus *Aptilotus* Mik, new combination. The species which Spuler described as *Pteremis flavifrons* clearly belongs in the genus *Pterogramma*, new combination, and may in fact be *Pterogramma palliceus* Johnson. According to Richards (1963) part of the series of *Pterogramma sublugabrina* (Malloch) on which Spuler based the genus *Pterogramma* are actually *Pterogramma palliceus* as well. Spuler's *Pteremis flavifrons* agrees with *Pterogramma palliceus* in such important characters as the greatly reduced lower orbital bristle, the yellow head, the porrect, somewhat pointed antennae, the greatly reduced interfrontal bristles, and the strongly divergent veins R^{1+2} and Rs . The only external difference between *P. flavifrons* (known only from the holotype female which was examined) and *Pterogramma palliceus* is the somewhat reduced wing of *flavifrons*, in which crossvein dm-cu is lost. Similar wing reduction has been noted as variation within a number of species in the Limosiniinae. Roháček (1975) illustrates a series of *Pullilimosina heteroneura* (Haliday) wings ranging from fully winged to a brachypterous form in which crossvein dm-cu is lost. Although *Pteremis flavifrons*

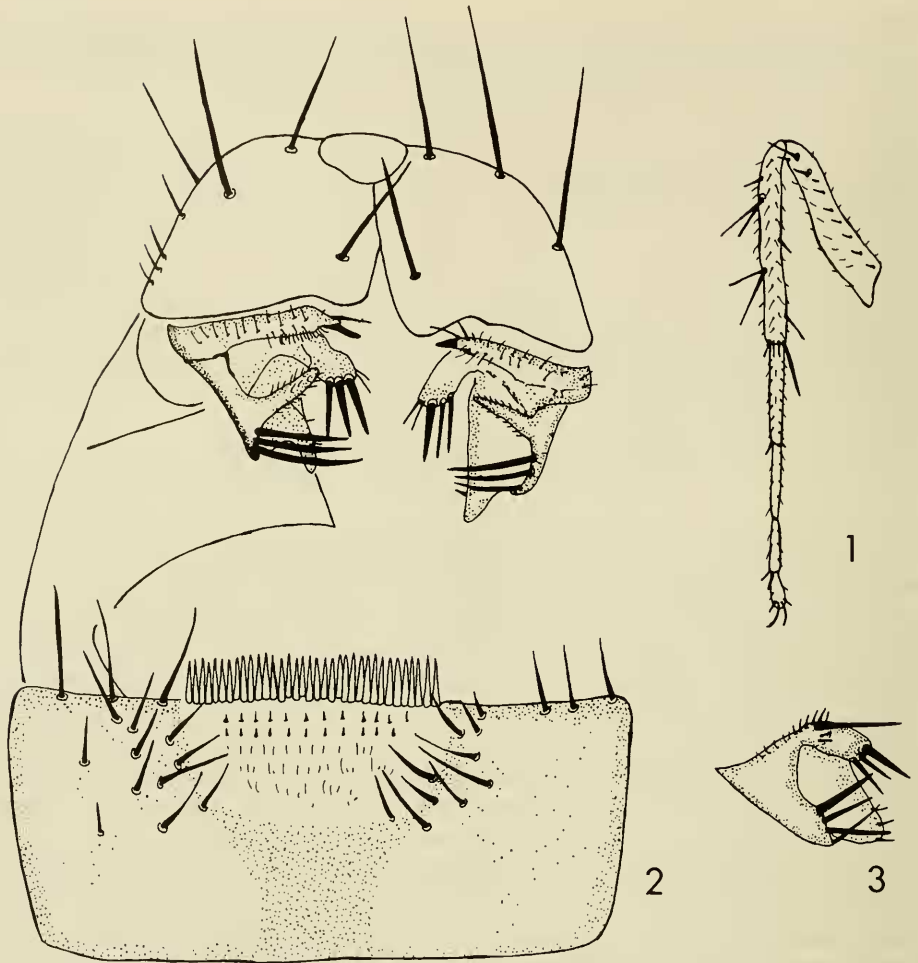
appears to be a reduced-wing form of *Pterogramma palliceps*, formal placement of these species into synonymy is deferred until a complete revision of North American *Pterogramma* can be undertaken.

The third species which Spuler described in *Pteremis*, the species *unica*, is difficult to place due to the poor condition of the holotype female (the only known specimen of this species). When it was described, it was largely de-bristled and Spuler was unable to describe any head chaetotaxy. This specimen now lacks one antenna, both arista, almost all head bristles, many leg bristles, and most notal bristles. It is not possible to confirm or refute the placement of *unica* in *Pteremis*; however, it is the only one of Spuler's 3 *Pteremis* that could possibly belong in this group, and it is therefore retained in *Pteremis*. To my knowledge there is only one other species of *Pteremis* in North America. It is very closely related to *P. fenestralis*, and is described as new below.

Leptocera (Pteremis) wirthi, NEW SPECIES

Figs. 1-3

Description.—Size 1.3–2.0 mm. Color black, with a heavy pruinosity; legs, halter and pleural sutures brown. Interfrontal plate slightly higher than wide, bordered by 4 long interfrontal bristles, the upper pair slightly shorter; small interfrontal setulae below lower interfrontal bristle. One distinct orbital setula between lower orbital bristles, other orbital setulae smaller. Postvertical bristle as long as middle interfrontal bristle, postocellar bristle absent. Face tuberculate between antennae, concave below. Eyes $3\times$ as high as gena; vibrissal angle small, with a long vibrissa, a small subvibrissal setula; genal bristles small. Katepisternum with a posterodorsal bristle reaching $\frac{3}{4}$ of distance to wing base, and a minute dorsal setula. Midtibia with long dorsal bristles (Fig. 1), a preapical ventral bristle and an apicoventral bristle usually lying flat along tarsus. Wing strongly reduced to fully developed; crossvein dm-cu absent in reduced forms, dm-cu complete and cell dm slightly appendiculate in fully developed forms; wings most commonly slightly shorter than abdomen with dm-cu complete but cell dm not appendiculate. Wing length variable even within series from a single collection. Second costal sector shorter than third, costa very slightly bypassing tip of R^{4+5} . Halter well developed, clavate, even in specimens with greatly reduced wings. Setulae of dorsocentral areas enlarged but only 1 pair of distinct dorsocentral bristles; acrostichal setulae in 4–6 rows between dorsocentral areas; in a row of 4 between the prescutellar dorsocentral bristles; the middle pair of prescutellar acrostichal bristles slightly enlarged. Scutellum $1.5\times$ as wide as long, with 4 pairs of marginal bristles, the basal pair slightly longer than scutellar length, the apical pair slightly longer than scutellar width. Abdomen of male with sternite 1 + 2 shorter than sternites 3 and 4, sternite 5 about half as long as sternite 4, with its posteromedial area weakly sclerotised and covered with posteriorly weakened rows of setulae; posteromedial margin with a long comb-like row of bristles (Fig. 3). Surstylus complex, divided into bilobed anterior and posterior parts (Fig. 3). Parameres narrowed medially, spatulate at apex, broad basally. Female abdomen gradually tapering; tergite 8 extended laterally, weakly sclerotised dorsally. Cercus short, blunt, slightly longer than epiproct, with apical bristle twice as long as cercus, preapical bristles shorter. Each spermatheca oval, tapering gradually to stem. Epiproct with 2 dorsal bristles.



Figs. 1-3. *Pteremis wirthi* and *fenestralis*. 1, *P. wirthi* midleg (anterior). 2, *P. wirthi* terminalia and sternite 5 (ventral). 3, *P. fenestralis* left surstylus (ventral).

Holotype δ .—Quebec. Mt. Albert, Gaspé Provincial Park, 5.vii–24.vii.1980, pan trap, C. Dondale. Paratypes: QUEBEC. 1 δ : Great Whale R., 10.vii.1949, J. R. Vockeroth; 1 δ : Mt. Ste. Marie, Low, 1800', 20.ix.1965, J. R. Vockeroth; 1 δ : Beechgrove, 2.x.1964, J. R. Vockeroth. SASKATCHEWAN. 1 δ : Assiniboia, 23.vi.55, on ground among *Carex* roots, J. R. Vockeroth. ALBERTA. 1 δ : Lancaster Park, 28.vi.1963, J. R. Vockeroth. NORTHWEST TERRITORIES. 8 φ , 7 δ : Aklavik, 8.ix.1931, O. Bryant (these specimens in poor condition). Northwest Territories specimens in California Academy of Sciences, holotype and other paratypes in Canadian National Collection.

Comments.—*P. wirthi* is externally very similar to the European *P. fenestralis*. *P. fenestralis* is larger, has a longer katapisternal bristle and has a brown gena in contrast to the pruinose grey gena of *P. wirthi*. The male surstyli are remarkably similar (Figs. 2 and 3) but consistently differ in the shape of the anterior lobe and chaetotaxy of the posterior lobe. *P. wirthi* differs from *P. unica* in having the eyes

3 × as high as the gena instead of only 1.5 × as high as in *unica*. The description of the Mongolian species, *P. kaszabi*, indicates that it is not within the size range of *P. wirthi* and that it differs in other features such as having only 3 pairs of interfrontal bristles.

Papp (1977) states that the other Palaearctic species, *P. canaria* "may be easily distinguished from any known sphaerocerid species: it has one strong ventral preapical bristle on its mid tibia but it has no ventroapical bristle on mid tibia and no mid metatarsal bristle." This apparent lack of the long ventroapical bristle (the main diagnostic feature of *Pteremis*) is remarkable, but *P. canaria* is otherwise very similar to *P. wirthi*. The male surstylus is very close to that of *P. wirthi* and *P. fenestralis*. It shares the digitiform inner ventral process with *P. wirthi* but is more similar to *P. fenestralis* in details of chaetotaxy and in having a short, blunt anterodorsal process.

Etymology.—*P. wirthi* is named after W. W. Wirth, Systematic Entomology Laboratory, USDA, Washington, D.C., in recognition of his patience with my many loan requests.

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